

IN THE CLAIMS:

Please AMEND claims 1-6, 12, 13, 15-19, 22-24 and 26 and CANCEL claim 11 in accordance with the following:

1. (currently amended) An electronic data storage apparatus for storing electronic data included in a group of electronic data storage apparatuses including a main electronic data storage apparatus, said electronic data storage apparatus comprising:

a key management unit managing an individual key unique to ~~the~~ said electronic data storage apparatus to which said management unit belongs, and a common key shared with other electronic data storage apparatuses of the group, selecting the individual key when performing an encryption process on electronic data stored in ~~the~~ said electronic data storage apparatus to which said management unit belongs, and selecting the common key when performing the encryption process or when verifying electronic data transmitted to or received from another electronic data storage apparatus; and

an encryption unit performing the encryption process using the key selected by said key management unit, and

wherein said individual key is generated and distributed to said electronic data storage apparatus by said main electronic data storage.

2. (currently amended) The apparatus according to claim 1, wherein said key management unit manages a group key as the common key to be shared in a said group of a plurality of electronic data storage apparatuses.

3. (currently amended) The apparatus according to claim 1, wherein:
~~a main electronic data storage apparatus exists in the group;~~
 said encryption unit of said main electronic data storage apparatus generates an individual key of each electronic data storage apparatus in the group using an individual key of the apparatus to which said management unit belongs; and
 said generated individual key is distributed to each electronic data storage apparatus belonging to the group.

4. (currently amended) The apparatus according to claim 2, wherein:
~~a main electronic data storage apparatus exists in the group;~~

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said encryption unit of said main electronic data storage apparatus generates a group key to be shared in the group using an individual key of the apparatus to which said management unit belongs; and

said generated group key is distributed to each electronic data storage apparatus belonging to the group.

5. (currently amended) The apparatus according to claim 2, wherein:

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~~a main electronic data storage apparatus exists in the group;~~

said encryption unit of said main electronic data storage apparatus generates a group key to be shared in the group with a key preliminarily assigned

as the individual key to said main electronic data storage apparatus associated with a new key externally specified; and

said generated group key is distributed to each electronic data storage apparatus belonging to the group.

6. (currently amended) The apparatus according to claim 2, wherein:

~~a main electronic data storage apparatus exists in the group, and an electronic data storage and management apparatus for managing respective main electronic data storage apparatuses in a plurality of groups exists;~~

said encryption unit of said electronic data storage and management apparatus generates an individual key of each of said main electronic data storage apparatuses using an individual key of the apparatus to which said management unit belongs; and

said generated individual key is distributed to each of said main electronic data storage apparatuses.

7. (previously amended) The apparatus according to claim 2, wherein said key management unit manages, in addition to said group key as the common key, a public key for use in transmitting electronic data to and receiving it from an electronic data storage apparatus belonging to a group different from a group of the electronic data storage apparatus to which said management unit belongs.

8. (original) The apparatus according to claim 1, wherein said individual key is preliminarily assigned to each electronic data storage apparatus before use of the apparatus.

9. (previously amended) The apparatus according to claim 1, wherein:
 said encryption unit generates the individual key with a key preliminarily set before use
 of the apparatus to which said management unit belongs with a new externally specified key;
 and
 said key management unit manages the generated individual key.

10. (previously amended) The apparatus according to claim 1, wherein said key
 management unit manages, in addition to the individual key and the common key, a master
 key to be shared by all electronic data storage apparatuses.

11. (cancelled)

12. (currently amended) The apparatus according to claim ~~4~~10, wherein:
~~a main electronic data storage apparatus exists in a group of a plurality of electronic data~~
~~storage apparatuses;~~

said encryption unit of said main electronic data storage apparatus generates a group
 key as the common key by encrypting information identifying the group using the generated
~~individual~~ master key; and

said generated group key is distributed to each electronic data storage apparatus
 belonging to the group.

13. (currently amended) The apparatus according to claim 1, wherein:
 a hierarchical structure of electronic data storage apparatuses is designed as having a
the group of a plurality of electronic data storage apparatuses as one hierarchical level; and

said key management unit manages a group key as the common key depending on the
 hierarchical level of the group containing the electronic data storage apparatus to which said
 management unit belongs.

14. (previously amended) The apparatus according to claim 13, wherein:
 in the hierarchical structure of the electronic data storage apparatuses, an electronic
 data storage and management apparatus for managing electronic data storage apparatuses in
 a lower order group exists in a group at one level higher than the lower order group;

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said encryption unit of said electronic data storage and management apparatus generates a group key for the lower order group using the individual key of the apparatus to which said management unit belongs; and

said generated group key is distributed to the electronic data storage apparatuses in the group at one level lower.

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15. (currently amended) A method of managing electronic data in an electronic data storage apparatus in a hierarchical structure having a group of a plurality of electronic data storage apparatuses as one hierarchical level, the group including said electronic data storage apparatus and a main electronic data storage apparatus, the method comprising:

re-encrypting, by a first electronic data storage apparatus in one hierarchical level of the hierarchical structure, data encrypted using an individual key which is unique to and stored in the apparatus, using a higher order group key corresponding to the hierarchical level, and transmitting the re-encrypted data to an electronic data storage and management apparatus for managing the electronic data storage apparatuses in a group at one hierarchical level lower;

verifying, by said electronic data storage and management apparatus for managing a lower group of electronic data storage apparatuses, the received data using the higher order group key, re-encrypting the received data using the lower order group key corresponding to one hierarchical level lower if the received data is correct as a result of the verification, and transmitting the received data to a second electronic data storage apparatus in the group at one level lower; and

verifying, by the second electronic data storage apparatus, the received data using the lower order group key, re-encrypting the received data using an individual key unique to the second electronic data storage apparatus if the electronic data is correct as a result of the verification, and storing the re-encrypted received data, and

wherein said individual key is generated and distributed by said main electronic data storage apparatus.

16. (currently amended) A method of managing electronic data in an electronic data storage apparatus in a hierarchical structure having a group of a plurality of electronic data storage apparatuses as one hierarchical level, the group including said electronic data storage apparatus and a main electronic data storage apparatus, the method comprising:

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CS re-encrypting, by a first electronic data storage apparatus in one hierarchical level of the hierarchical structure, data encrypted using an individual key which is unique to and stored in the first electronic data storage apparatus, using a lower order group key corresponding to the hierarchical level, and transmitting the re-encrypted data to a lower order group electronic data storage and management apparatus for managing the electronic data storage apparatuses in the group;

B' cont verifying, by said electronic data storage and management apparatus for managing a lower group of electronic data storage apparatuses, the received data using the lower order group key, re-encrypting the received data using the higher order group key corresponding to one hierarchical level higher if the electronic data is correct as a result of the verification, and transmitting the data to a receiving electronic data storage apparatus in the group at one level higher;

verifying, by the second electronic data storage apparatus, the received data using the higher order group key, re-encrypting the received data using an individual key unique to the second electronic data storage apparatus if the electronic data is correct as a result of the verification, and storing the re-encrypted received data, and

wherein said individual key is generated and distributed by said main electronic data storage apparatus.

17. (currently amended) A method of processing electronic data, comprising the: storing in a storage unit an individual key unique to an electronic data storage apparatus for storing electronic data and a common key shared with another electronic data storage apparatus;

selecting the common key stored in the storage unit as a key to be used when communicating electronic data ;

selecting the individual key to be used when performing an encryption process on data to be stored in the said electronic data storage apparatus; and

performing the communication process or encryption process using the selected key, and

wherein said individual key is generated and distributed to said electronic data storage apparatus by a main electronic data storage apparatus in a group of data storage apparatuses including said data storage apparatus.

18. (currently amended) The method according to claim 17, wherein;

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said electronic data storage apparatus stores as the common key a group key shared in one group of a plurality of electronic data storage apparatuses;

re-encrypting, by a first electronic data storage apparatus, electronic data, encrypted using the individual key and stored in the first electronic data storage apparatus, using the group key, and transmitting the data to a second electronic data storage apparatus ; and

verifying by the second electronic data storage apparatus, the received electronic data using the group key, re-encrypting the received electronic data using the individual key when the electronic data is correct according to the result of the verification, and storing the re-encrypted received data.

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19. (currently amended) The method according to claim 17, wherein;

said electronic data storage apparatus belonging to one group of ~~electronic data storage apparatuses~~ stores as the common key a public key of an electronic data storage apparatus belonging to another group of a plurality of electronic data storage apparatuses;

re-encrypting by a first electronic data storage apparatus, electronic data, encrypted using individual key and stored in the first electronic data storage apparatus using the public key and transmitting data to a second electronic data storage apparatus ; and

verifying by the second electronic data storage apparatus the received electronic data using a private key which is a pair member with the public key, re-encrypting the received electronic data using the individual key when the electronic data is correct according to the result of the verification, and storing the re-encrypted received data.

20. (cancelled)

21. (cancelled)

22. (currently amended) An electronic data storage apparatus for storing electronic data, comprising:

key management means for managing an individual key unique to the electronic data storage apparatus to which said key management means belongs, and a common key shared with other electronic data storage apparatuses, selecting the individual key when performing an ~~encrypting~~ encryption process on electronic data stored in the electronic data storage apparatus to which said means belongs, and selecting the common key when performing an encryption process or when verifying electronic data transmitted to or received from another electronic data

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storage apparatus; and

encryption means for performing the encryption process using the key selected by said key management unit, and

wherein said individual key is generated and distributed to said electronic data storage apparatus by a main electronic data storage apparatus in a group of data storage apparatuses including said data storage apparatus.

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23. (currently amended) A computer-readable storage medium for storing the program which directs a computer to process electronic data, comprising of:

storing in a storage unit an individual key unique to an electronic data storage apparatus for storing electronic data and a common key shared with another electronic data storage apparatus;

selecting the common key stored in the storage unit as a key to be used when communicating electronic data;

selecting the individual key as a key to be used when performing an encryption process on data to be stored in the electronic data storage apparatus; and

performing the communication process or the encryption process using the selected key, and

wherein said individual key is generated and distributed to said electronic data storage apparatus by a main electronic data storage apparatus in a group of data storage apparatuses including said data storage apparatus.

24. (currently amended) A method of data transmission for a local environment and a global environment, comprising:

storing a local encryption key for the local environment locally and storing a global key for the global environment;

receiving data to be transmitted along with an environment indicator indicating the environment of the data transmission;

selecting one of the local and global encryption keys responsive to the indicator;

encrypting the data with the selected one of the keys; and

transmitting the encrypted data, and

wherein the local key is used for data storage in a local data storage unit only by a local data storage system that stores the local key.

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25. (previously added) A method as recited in claim 24, wherein the local environment comprises a local area network, the global environment comprises the internet, and the indicator is an address of the data transmission where a local area address indicates the local environment.

26. (currently amended) A method as recited in claim 25, wherein the method is performed by a data storage apparatus data transmission, the data transmission comprising a transmission to a data storage device having a device address within the data storage apparatus, said storing comprises storing a data storage device encryption key, and said selecting comprises selecting the device encryption key when the transmission is to the storage device.
